Lab 6 Specifications

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Lab-specific Specifications

Proficiency

- ☐ Design uses CMSIS library device templates.
- ☐ SPI library written
- ☐ SPI library can communicate with the digital temperature sensor to read the current temperature
- ☐ System properly handles temperatures between -10 ˚C and 30 ˚C.
- ☐ Webpage displays current temperature with units
- ☐ Webpage updates temperature when refreshed
- ☐ Webpage properly displays the LED state
- ☐ Webpage can control the LED state

Excellence

- ☐ Report includes sample SPI transaction from logic analyzer
- ☐ System reads temperature values at either user-configured resolution (e.g., user can choose from 8/9/10/11/12-bit resolution on webpage).

General Specifications

Proficiency

General Schematic Specifications

- ☐ All pin names labeled
- ☐ All pin numbers labeled
- ☐ Crossing wires clearly identified as junction or unconnected
- ☐ Neat layout (e.g., clear organization and spacing)
- ☐ All parts labeled with part number
- ☐ All component values present

Block Diagram

- ☐ Block diagram present with one block per SystemVerilog module
- ☐ Each block includes all input and output signals

HDL & Code Specifications

General Formatting

- ☐ Descriptive filename (e.g., `lab2_jb.sv`)
- ☐ Descriptive variable names
- ☐ Neat formatting (e.g., standard indentation, consistent formatting for variable names (kebab-case/snake_case/camelCase/PascalCase))
- ☐ Descriptive and clear function/module names

Comments

- ☐ Comments to indicate the purpose of each function/module

Lab Writeup/Summary

- ☐ Brief (e.g., 3-5 sentence) description of the main goals of the assignment and what was done.
- ☐ Explanation of design approach. How did you go about designing and implementing the design?
- ☐ Explanation of testing approach. How did you verify your design was behaving as expected?
- ☐ Statement of whether the design meets all the requirements. If not, list the shortcomings.
- ☐ Number of hours spent working on the lab are included.
- ☐ Writeup contains minimal spelling or grammar issues and any errors do not significantly detract from clarity of the writeup.
- ☐ (Optional) List commments or suggestions on what was particularly good about the assignment or what you think needs to change in future versions.

Excellence

General Schematic Specifications

- ☐ Standard symbols used for all components where applicable
- ☐ Signals "flow" from left to right where possible (e.g., inputs on left hand side, outputs on right hand side)
- ☐ Title block with author name, title, and date

HDL & Code Specifications

General Formatting

- ☐ Name, email, and date at the top of every file
- ☐ Comment at the top of each source code file to describe what is in it
- ☐ Clear and organized hierarchy (e.g., deliniation between top level modules and submodules)

Testbenches

- ☐ Testbenches written for each individual module to demonstrate proper operation
- ☐ Testbench output included in the report

Lab Writeup/Summary

- ☐ Writeup is free of spelling and grammar issues